

AMENDMENTS

Listing of claims:

This listing of claims will replace all prior versions, and listings, of claims in the application.

Claims 1-19 (cancelled)

20. **(currently amended)** An erythropoietin receptor (EPOR) analog protein comprising an amino acid sequence that has at least one amino acid substitution as compared to the wild-type EPOR sequence (SEQ ID NO: 2), wherein said substitutions are selected from amino acid[[s]] residues comprising one or more of the following regions:

- a) the inter-monomer interface;
- b) domain D1;
- c) domain D2;
- d) the conserved WSXWS box (SEQ ID NO:30); and
- e) the N-terminal helix.

21. **(previously presented)** The EPOR analog protein according to claim 20 comprising at least one amino acid substitution from said inter-monomer interface, said substitutions comprising amino acid residues at positions 155, 175 and 178.

22. **(previously presented)** The EPOR analog protein according to claim 20 comprising at least one amino acid substitution from said inter-monomer interface, said substitutions comprising amino acid residues at positions 133 and 135.

23. **(previously presented)** The EPOR analog protein according to claim 20 comprising at least one amino acid substitution from said domain D1, said substitutions comprising amino acid residues at positions 40, 53, 55, 57, 69, 79, 81, 85, 96, 98, 100, and 109.

24. **(previously presented)** The EPOR analog protein according to claim 23 wherein said substitutions are selected from the group of substitutions consisting of W40F, W40Y, Y53F, F55I, Y57F, L69I, V79I, L96F, V100L, and Y109F.

25. **(previously presented)** The EPOR analog protein according to claim 20 comprising at least one amino acid substitution from said domain D2, said substitutions comprising amino acid residues at positions 120, 121, 127, 129, 138, 140, 142, 156, 158, 160, 174, 183, 192, 194, 196, 198, 207, and 218.

26. **(previously presented)** The EPOR analog protein according to claim 25 wherein said substitutions are selected from the group of substitutions consisting of L127I, A129V, V138I, L140I, Y156F, Y156W, V158L, V158I, V160I, I174L, Y192I, Y192F, F194I, F194V, F194L, G207W, G207I, G207M, F208I, F208Y, F208E, L218F, and L218I.

27. **(previously presented)** The EPOR analog protein according to claim 20 comprising at least one amino acid substitution from said WSXWS box (SEQ ID NO:30), said substitutions comprising amino acid residues at positions 209, 210, 211, 212, and 213.

28. (previously presented) The EPOR analog protein according to claim 27 wherein said substitution is A211Y.
29. (previously presented) The EPOR analog protein according to claim 20 comprising at least one amino acid substitution from said N-terminal helix region, said substitutions comprising amino acid residues at positions 11, 15, 17, 18, 19, 29, 37, and 39.
30. (previously presented) The EPOR analog protein according to claim 29 wherein said substitutions are selected from the group of substitutions consisting of K11L, K11W, K11Y, K11A, K11Q, A15L, A15Y, A15M, A15S, A15R, L17F, L17Y, L17I, L17W, L17M, L17K, L18Y, L18N, A19W, A19V, A19Y, A19D, F29L, F29Y, F29R, C37I, C37L, C37E, C37Q, and C37E.
31. (previously presented) The EPOR analog protein according to claim 20 comprising at least one amino acid substitution from said domain D1 and said domain D2, said substitutions comprising amino acid residues at positions 40, 53, 55, 57, 69, 79, 81, 85, 96, 98, 100, 109, 127, 129, 138, 140, 142, 156, 158, 160, 174, 183, 192, 194, 196, 198, 207, and 218.
32. (previously presented) The EPOR analog protein according to claim 31 wherein said substitutions are selected from the group of substitutions consisting of W40F, W40Y, Y53F, F55I, Y57F, L69I, V79I, L96F, V100L, Y109F, L127I, A129V, V138I, L140I, Y156F, Y156W, V158L, V158I, V160I, I174L, Y192I, Y192F, F194I, F194V, F194L, G207W, G207I, G207M, F208I, F208Y, F208E, L218F, and L218I.
33. (previously presented) The EPOR analog protein according to claim 32 wherein the protein comprises SEQ ID NO: 6.
34. (previously presented) The EPOR analog protein according to claim 31 further comprising a linker.
35. (previously presented) The EPOR analog protein according to claim 34 further comprising a dimerization motif.
36. (previously presented) The EPOR analog protein according to claim 35 wherein the protein comprises SEQ ID NO: 37.
37. (previously presented) A receptor analog protein comprising an amino acid sequence that has at least 10 to 24 amino acid substitutions as compared to the corresponding wild-type receptor protein, wherein said receptor analog protein binds a natural ligand for said naturally occurring wild-type receptor protein at the same or higher affinity than said naturally occurring wild-type protein.
38. (previously presented) The EPOR analog protein according to claim 20 comprising an amino acid sequence that has at least one amino acid substitution as compared to the wild-type

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EPOR sequence, wherein said substitution is selected from amino acids residues in domains D1 and D2 of said EPOR analog protein.